Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

the surface should be watched and kept clear while reducing it to a useable thickness, that no flaws may be beat in: all welding must likewise be avoided, for fear of shutting in flaws; and if rolled into plates, it will require good hammering afterwards to restore the strength or soundness which it loses laterally while rolling. The especial reason why the primary forging should be long and carefully performed, is, that the etching is liable to be rough or smooth, as perfect homogeneity is more or less obtained, and it will be cloudy if different parts of the plate differ in their dose of carbon.

It would be desirable for engravers to make themselves well acquainted with the difference of action of the same acid on pure decarbonized steel, on ordinary steel, and on highly carbonized steel, and also on steel in the softest as well as in the most condensed state; for they would thus judge better whether the defects were in the metal or the acid.

CORNELIUS VARLEY.

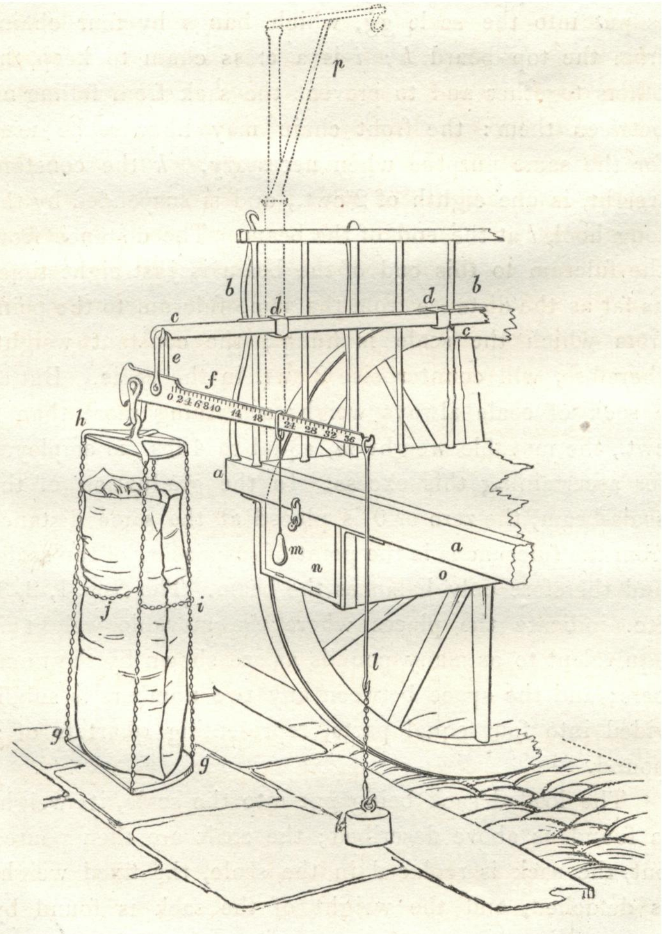
1, Charles Street, Clarendon Square,
Somers Town.

No. VII.

MACHINE FOR WEIGHING COALS IN SACKS.

The LARGE SILVER MEDAL *was presented to Mr.* JAMES BRABY, *of Duke Street, Stamford Street, for his Machine for weighing Coals in Sacks.*

A BILL having been introduced into the late Parliament, for the sale of coals in the metropolis by weight, instead of by measure, Mr. Braby endeavoured to invent a cheap, accurate, and portable weighing machine, to be attached to or carried by each waggon, instead of a bushel measure as at present, in order to satisfy any purchaser that the sacks of coals delivered to him are of their due weight.



aa represents the tail of a coal-waggon; *b b* the side-rails, to which are fastened two iron straps *dd:* an iron bar *c c* slides in these straps, having a hook at the end, to which is hung the steel-yard *f*, by means of the shackle *e*. The knife-edge on which the beam turns is nicely rounded to avoid friction, so that when loaded it will turn with an ounce or two. The sack of coals is put into the scale *gg*, which hangs by four chains from the top-board *h; i* is a cross chain to keep the others together and to prevent the sack from falling off between them: the front chain may likewise be used for the same purpose when necessary. *k* the constant weight, is one eighth of 2 cwt., and is suspended by the long hook *l* at the end of the beam. The distance from the fulcrum to this end of the beam is just eight times as far as the distance from the same fulcrum to the point from which the scale is hung; the constant weight, therefore, will counterpoise 2 cwt. in the scale. But as a sack of coals always weighs something more than 2 cwt., the movable weight *m*, equal to 4 lbs., is employed for ascertaining this excess. In the graduation of the scale-beam, the zero or 0 is placed at the same distance from the fulcrum as is the point of suspension of the scale, and therefore only balances the beam. The Nos. 1, 2, 3, &c. indicate the places where the movable weight is equivalent to as many pounds as are shewn by the numbers; and the space between any two numbers is subdivided into four equal parts, representing quarters of a pound.

The loaded sack being put into the scale, its weight is found as above described; the coals are then poured out, the sack is replaced in the scale, the fixed weight is detached, and the weight of the sack is found by means of the movable weight, which deducted from the amount of the loaded sack, gives the weight of the coals true to a quarter of a pound.

The whole apparatus, with the exception of the suspending bar, goes into the box *no* which slides like a drawer beneath the tail of the waggon, and weighs (box included) less than 70 lbs.

The dotted lines *p* represent a small movable crane, or rather arm, from which the instrument may be hung, if it should be more convenient to weigh the sacks in the waggon instead of on the foot-pavement.

No. VIII.

LIFE-RAFT.

The LARGE SILVER MEDAL *was presented to* ALFRED CANNING, *Esq., of* 54, *Richardson Street, Bermondsey, for his Life-Raft; Models of which have been placed in the Society's Repository.*

SIR, *London, March* 15, 1831.

I BEG leave to offer for the consideration of the Society of Arts, &c., the model of a life-raft which I have invented and tried. It is for the purpose of conveying persons shipwrecked over pointed rocks, and through breakers of the most formidable description to a lee-shore, in cases where even a life-boat or life-raft, constructed upon the best principles hitherto made public, must necessarily be dashed to pieces. The persons coming ashore upon my life-raft are not liable to frequent